

ABSTRACT

An integrated modem circuits comprising processor-systems (1) and hardware (2,3) for exchanging signals with another modem circuit 1 Mb/s or more are provided with low cost, accurate, flexible filter software (11) for embodying a digital phase locked loop filter. Said hardware (2,3) comprises fast modules (22,32) for compensating for sample processing. The insight of hardware phase locked loops being expensive, not accurate, inflexible and of software phase locked loops being slow results in the basic idea of the phase locked loop calculations being done in software and the compensations being done in hardware. Sample software (14,15) processes samples (shifting - adding - deleting). Said hardware (2,3) comprises in the transmission path (2) mappers (21), rotors (22) and inverse Fourier transformers (23) and in the receiving path (3) Fourier transformers (33), rotors (32) and demappers (31). Control software (12,13) controls said rotors (22,32). In software in processor-system (1) there are initialization steps (101), reading steps (102), detection steps (104,105,106,111,112,115) executing steps (108,109), adaptation steps (110,116,117), and incrementation steps (114,118).

Figure 1 is attached